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ABSTRACT

This is volume 3 of the series of translations of books from the Soviet literature on research in the psychology of mathematics instruction and on teaching methods influenced by the research. This volume presents a detailed and careful technical analysis of the constituent aspects underlying spatial thinking as well as interesting reports of investigations into the development of spatial thinking. Not only is the complex nature of spatial thinking discussed in depth, but also techniques for observing and improving spatial thinking are offered. The first chapter discusses the results of a considerable effort to explain the nature of spatial thinking according to Soviet psychological literature and philosophy. The second chapter details a systematic theoretical structure of spatial thinking based upon the foundation laid in the first chapter. The third chapter presents the principles, basic requirements, and techniques used for the design specifications of a method for diagnosing various levels of spatial thinking. (JJK)

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